



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 1  
1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

N62661 AR 001377  
NAVSTA NEWPORT RI  
5090.3a

November 20, 2000

James Shafer, Remedial Project Manager  
U.S. Department of the Navy  
Naval Facilities Engineering Command  
Northern Division  
10 Industrial Highway  
Code 1823, Mail Stop 82  
Lester, PA 19113-2090

Re: DRAFT FINAL REMEDIAL INVESTIGATION FOR THE OLD FIRE FIGHTING  
TRAINING AREA

Dear Mr. Shafer:

EPA reviewed the *Draft Final Remedial Investigation for the Old Fire Fighting Training Area, dated October 2000* for technical sufficiency, applicable regulations, EPA guidance, and generally accepted practice. This document summarizes six separate investigations conducted over a ten-year period. These investigations include the Phase I and Phase II remedial investigations conducted between 1990 and 1994; a Source Removal Evaluation completed in January 1998; the offshore ecological investigations also conducted in 1998; the Marine Ecological Risk Assessment completed in April 2000; a Phase III RI and Human Health Risk Assessment for Recreational Use completed in May 2000; and a Background Soil Investigation completed in May 2000. Overall, I am concerned that the Remedial Investigation underestimates site risks and does not forthrightly present uncertainties among the data and analyses. Detailed comments are provided in Attachment A.

The Draft Final Remedial Investigation for the Old Fire Fighting Training Area has neglected to discuss the conclusions based on the conceptual understanding of the site. The final objective of a Remedial Investigation is to characterize the nature and extent of contamination such that informed decisions can be made as to the level of risk presented by the site and the need for a remedial response. Section 8.0 of the report should include the data limitations, uncertainty, and recommendations for further characterization or recommendations for conducting a Feasibility Study, as appropriate.

Various sampling methodologies were implemented during sample collection for the different data sets. For instance hand bailers were used to collect groundwater samples during the Phase II RI and the USEPA Region I Low Stress (low flow) Purging and Sampling Procedure (July 30, 1996), methodology was followed when collecting groundwater samples as part of the Phase III groundwater investigation. As a result, the report should discuss what precautions were made to ensure the representativeness and comparability of the data from each data set. When evaluating analytical data collected using different sampling methodologies apparent trends in data may not

be representative or obvious. For example, analytical data from sampling events that used a teflon bailer should be approached with considerable caution. In particular total inorganics concentrations are likely to be strongly influenced by turbidity, which is difficult to control when sampling with a hand bailer as was the case during the Phase I and Phase II groundwater investigation. This was observed in the turbidity measurements from the Phase II groundwater investigation in which turbidity values ranged from 110 NTU to greater than 1,000 NTU.

Also, the report should discuss whether the laboratory analytical procedures, method detection limits, holding times were evaluated over the ten-year span when data was collected, to ensure the various data sets were analyzed in the same manner and are in fact representative and comparable.

Exposure parameters used for the human health risk assessment agreed with exposure parameters submitted June 22, 2000 memorandum and with recommendations made by EPA during review of the proposed exposure parameters. I note, however, that such exposure parameters are not in agreement with the recommendations/regulations of the Rhode Island Department of Environmental Management.

EPA Region 3 Residential Risk-based Concentrations (RBCs) were used during the screening process to select Chemicals of Potential Concern (COPCs) in the human health risk assessment. While these values are appropriately conservative, EPA Region 1 guidance (EPA, August 1995) requires the use of EPA Region 9 Preliminary Remediation Goal (PRG) values for screening in the COPC selection process. Please provide rationale for using Region 3 rather than Region 9 screening values.

Several chemicals were not retained as COPCs for the human health risk assessment due to lack of toxicity data and/or screening concentration. These chemicals are identified as not being retained with a rationale of "NTX" in the screening tables. EPA Region 1 guidance (EPA, August 1995) requires that chemicals without toxicity data be retained as COPCs and evaluated qualitatively. All chemicals currently not retained with a rationale of "NTX" should be retained as COPCs and evaluated qualitatively in the human health risk assessment.

Several chemicals were not retained as COPCs for the human health risk assessment based on a statistical comparison to background. These chemicals are identified as not being retained with a rationale of "BKG" in the screening tables. As you know, EPA Region 1 guidance (EPA, August 1995) does not allow for elimination of chemicals during the screening process based on comparison to background. EPA's national guidance regarding the use of background data in a risk assessment will be issued shortly. The background comparison step should be used in the risk management process after the risk evaluation has been completed. All chemicals currently not retained with a rationale of "BKG" should be retained as COPCs and evaluated quantitatively in the human health risk assessment. It is important to characterize all risks at the site for the community, including those risks from background. Sections 1.1 (b), 2.6, and 6.1 of the Federal

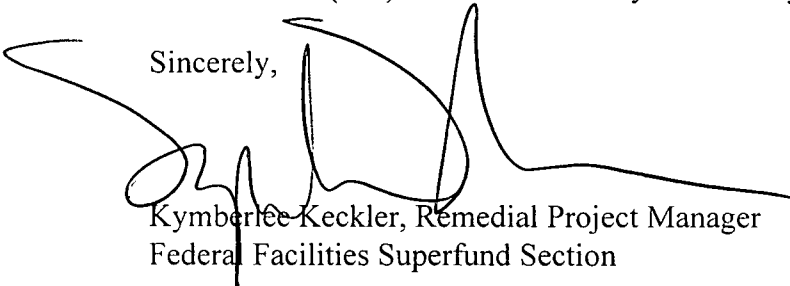
Facilities Agreement require that remedial investigations under CERCLA are conducted in accordance with EPA regulations, policy, and guidance.

On page 6-6, it is stated that Central Tendency Exposure (CTE) calculations will only be presented for certain receptors. The discussion indicates that the rationale for conducting CTE evaluations is provided in Section 6.7.0. However, the referenced section does not include the rationale for conducting CTE evaluations in specific circumstances. Please include a discussion explaining the rationale and conditions for conducting CTE evaluations and how the CTE information will be used.

An Executive Summary has not been included in this document. Please provide an Executive Summary for this document.

I look forward to working with you and the Rhode Island Department of Environmental Management toward the cleanup of the Old Fire Fighter Training Area. Please do not hesitate to contact me at (617) 918-1385 should you have any questions or wish to arrange a meeting.

Sincerely,



Kymberlee Keckler, Remedial Project Manager  
Federal Facilities Superfund Section

Attachment

cc: Paul Kulpa, RIDEM, Providence, RI  
Richard Gottlieb, RIDEM, Providence, RI  
Melissa Griffin, NETC, Newport, RI  
Mary Sanderson, USEPA, Boston, MA  
David Peterson, USEPA, Boston, MA  
Jennifer Stump, Gannet Fleming, Harrisburg, PA  
Diane Baxter, Tetra Tech-NUS, Wilmington, MA  
Mary Philcox, URI, Portsmouth, RI  
David Egan, TAG recipient, East Greenwich, RI

## ATTACHMENT A

<u>Page</u>	<u>Comment</u>
p. 1-13, §1.4.2	Upon closure of the Fire Fighting Training Area (FFTA) the on-site structures were demolished and buried. The report does not specify whether the oil water separators and associated underground piping, discussed in this section, were included in the debris that was buried on-site. Please provide the disposition of these underground storage tanks and associated underground piping. Alternatively, the report should recommend studies to evaluate the central drumlin on-site or other suspected burial areas.
p. 2-17, §2.2.4.2	A 4-inch clay pipe containing approximately one inch of a black oily sludge material was observed at the ends of test pit samples TP-1A and TP-1C at a depth of 4 feet. As part of the Phase II Investigation, a sample of the sludge was collected for analysis and the clay pipe was plugged using absorbent pads, before backfilling TP-1. Analytical results from the oily sludge sample exhibited elevated concentrations of total PAHs (156,900 ppb) and bis(2-ethylhexyl)phthalate (12,000 ppb). To ensure that the sludge material observed in TP-1 has not leached from the absorbent pads into the underlying soils and groundwater I recommend that an additional subsurface soil sample be collected in the vicinity of TP-1 at a depth just underlying the pipe. Additionally, I recommend that further evaluation of the historical use and layout of the clay pipe be conducted as well as an evaluation of the possibility of pipe materials leaching into the underlying subsurface.
p. 2-25 §2.3.2.1	The excavation of test pit TP-4 was reportedly halted owing to the presence of a potentially asbestos-containing material. The text should discuss the actions that were taken to verify the composition of this material ( <i>i e.</i> , sampling) and should discuss the disposition of the material. Also, the report does not specify whether the black oily sludge observed in the clay pipe located adjacent to TP-1 was observed in the clay pipe encountered during the excavation of test pit TP-12. If the oily sludge material was observed in the clay pipe adjacent to TP-12, the text should include what actions were followed to contain the substance and if the material was analyzed.
p. 2-27, §2.3.3.1	The text states that "Potential till-like layers" were encountered at refusal depths during the installation of monitoring wells MW-101 and MW-102. It is unclear why the text references this lithology as potential till-like, when the boring logs for MW-101 and MW-102 have identified this

material as till. This discrepancy should be clarified. Also, the first and second sentences of the third paragraph are repeated and should be removed.

- p. 2-30, §2.3.5 According to the text, storm sewer sample SW-2 was collected from a manhole on the western side of the central mound. Figure 2-13 however, shows the location of SW-2 at a catch basin located to the southwest of Building 144 and the location of storm sewer sample SW-1 on the western side of the central mound. This discrepancy should be corrected. In addition, the text should describe the methodology that was used to collected aqueous samples from each manhole/catch basin at the site.
- p. 2-31, §2.4.1 Surface soil samples were collected from 32 locations during the Phase III Remedial Investigation. From these 32 samples four were selected and analyzed for dioxins/furans. The text should provide the criteria that were used to select samples for dioxins/furans analysis.
- p. 2-31, §2.4.2 The first sentence in this section reads "Sediment samples were collected from 5 locations (SSD-32 - SSD-37) along the shoreline." Sediment samples SSD-32 through SSD-37 consists of 6 locations. This discrepancy should be corrected.
- p. 3-9, §3.2.2 The fill layer has been described as present throughout most of the site and ranging in thickness from 0.5 feet to more than 20 feet. It is stated in the text that this RI does not specifically address the characteristics of the fill material, or the potential for leaching contaminants from the fill material into groundwater. The text should provide an explanation for excluding this information in the report.
- p. 4-4, §4.1.1 According to the text, methylene chloride was detected in five subsurface soil samples. Table 4-2 however, shows that methylene chloride was detected in six subsurface soil samples. This discrepancy should be corrected.
- p. 4-5, §4.1.2 It is stated in the report that SVOC concentrations, other than CaPAHs, detected in surface and subsurface soil samples were less than the RIDEM Residential Direct Exposure Criteria and the RIDEM GB Leachability Criteria. The RIDEM GB Leachability Criteria for surface and subsurface soils should be added to the corresponding Table 4-2 for comparative purposes.

In addition, the last paragraph of this section discusses the analytical results of the oily sludge sample collected from the clay pipe encountered

during the excavation of test pit TP-1. This analytical data however is not presented on the corresponding tables. This information should be added to the table.

- p. 4-8, §4.1.3 According to the text, Table 4-2 presents a comparison of the PCB concentrations detected in the site subsurface soil with the RIDEM soil action levels. Table 4-2 however, does not include the RIDEM Residential Direct Exposure Criteria. The subsurface soils action levels for PCBs should be added to Table 4-2.
- p. 4-11, §4.1.6 Analysis for TPH was conducted during the Source Removal Evaluation with the collection of 14 subsurface soil samples. According to the text, subsurface soil samples analyzed for TPH during this investigation included "...one soil sample from each of the 12 test pits (all test pits except TP-01, TP-03, TP-09 and TP-10)..." as well as monitoring wells MW-101 and MW-102. It is unclear what is meant when the text states "all test pits except TP-01, TP-03, TP-09 and TP-10" since a total of 14 subsurface soil samples were collected. This statement should be clarified.
- p. 4-14, §4.2.2 Benzo(a)pyrene was detected in groundwater samples collected from MW-2S and MW-11S. According to the text, these are the only two locations with detected benzo(a)pyrene concentrations in groundwater. However, according to Table 4-3 benzo(a)pyrene was detected in three groundwater samples. This discrepancy should be corrected.
- p. 4-15, §4.2.4 According to the text, the metals most common to the groundwater samples collected on the site include aluminum, barium, calcium, cobalt, iron, lead, magnesium, manganese, potassium, sodium, and zinc. Chromium should also be added to this list since it was detected in 27 of the 29 groundwater samples collected.
- p. 4-16, §4.2.4 A comparison of the filtered versus the unfiltered samples results, according to the text, indicated that the inorganic concentrations in the filtered samples are generally far below the concentration of the unfiltered samples. The text includes a list of metals that did not have significantly different concentrations between filtered and unfiltered samples. These metals included calcium, potassium, magnesium, manganese, and sodium. The text however, does not indicate that antimony was detected in the filtered sample at a higher concentration (212  $\mu\text{g/L}$ ) than the unfiltered sample (37.5  $\mu\text{g/L}$ ), as shown in Table 4-3. This should be addressed in the report.

- p. 4-18, §4.3.2 Bis(2-ethylhexyl)phthalate was detected in all four storm sewer samples collected. It is stated in the text that bis(2-ethylhexyl)phthalate was detected in each sample at a concentration of 3 ppb. Table 4-4 however, shows that bis(2-ethylhexyl)phthalate concentrations range from 2 ppb to 3 ppb. This discrepancy should be corrected.
- In addition, the AWQC levels for bis(2-ethylhexyl)phthalate and phenanthrene discussed in the text are not included in the corresponding Table 4-4. This information should be added to the table.
- p. 4-19, §4.3.4 According to the text, chromium and vanadium were detected in two of the four storm water samples. Arsenic was also detected in two of the four storm water samples and should be included in the text. In addition, the text states that nickel exceeded the marine chronic AWQC of 8.3 ppb in sample ST-1 and that the marine acute AWQC for copper is 2.9 ppb. Table 4-4, however shows the marine chronic AWQC value for nickel as 8.2 ppb and the marine acute AWQC for copper as 4.8 ppb. These discrepancies should be corrected.
- p. 4-18, §4.3.2 The first sentence in the second paragraph of this section reads "Sediment samples were collected from 5 locations (SSD-32 - SSD-37)." Sediment samples SSD-32 through SSD-37 consists of 6 locations. This discrepancy should be corrected.
- p. 5-5, §5.2 Please verify the units for analytical data presented in this section. There appears to be a mix up with symbol codes. For instance, the maximum ethylbenzene concentration detected in soil is presented in the text as "630 □g/kg."
- p. 6-23, §6.4 9 This section indicates that the screening and toxicity values for naphthalene were used as a surrogate for acenaphthylene, benzo(g,h,i)perylene and phenanthrene. However, the screening tables do not use the naphthalene screening value as a surrogate for these compounds. Please correct this discrepancy in all screening tables.
- Tables 6-2.1 to 6-2.6 All of these tables have a footnote 3 that reads "Provide reference for screening toxicity value." Please replace this statement with the specific references for all screening toxicity values. Also, indicate where surrogate chemicals have been used.
- Tables 6-2.1 & 6-2.2 These tables indicate that selenium is not being retained as a COPC based on a background comparison. However, Tables P-18 and Q-19 in Appendix Q-3 indicate that there is no background value for selenium.

Please correct the rationale for retention/elimination of selenium in Tables 6-2.1 and 6-2.2.

Tables 6-5.1 & 6-6.1 These tables provide a dermal absorption value (ABS) for cadmium of 0.001 with a reference of EPA, 1998 (Interim Dermal Guidance). However, the cadmium ABS value in the cited reference is 0.01. Both EPA, 1992 and EPA, 2000 dermal guidance support using a cadmium ABS value of 0.001. Therefore, only reference cited for this value should be corrected.

Tables 6-5.1 & 6-6.1 As a footnote to these tables, please provide the reference used for the oral to dermal adjustment factors. The oral to dermal adjustment factors for arsenic and cadmium could not be verified using the reference cited in the text.

Table 6-5.1 There were several errors/omissions in this table. The manganese oral RfD for non-food/soil should be 2.0E-02. The toxicity information for silver has not been completed (*i.e.*, chronic/subchronic, target organ, UF/MF, and date). Please indicate that alpha chlordane was used a surrogate for trans-nonachlor.

p. 7-1, §7.0 This section provides a summary of the marine ecological risk assessment (ERA) for OFFTA. The third paragraph on this page provides two bulleted items that are stated to be the objectives of the marine ERA taken directly from the ERA Report. While these two bulleted items are correct, a third objective that is presented in the ERA Report has been omitted from the RI Report. This third objective is, "Support communication to the public of the nature and extent of ecological risks associated with Old Fire Fighting Training Area." This third objective should be included in Section 7.0 of the RI Report.

Table P-18, App. Q Table P-18 in Appendix Q-3 should be titled "Table Q-18."

Table Q-19, App. Q Table Q-19 in Appendix Q-3 indicates that detected concentrations of selenium in subsurface soil at the site are not greater than background concentrations. However, selenium was not detected in background subsurface soils. Please correct this table to reflect that selenium subsurface concentrations at the site are indeed greater than background subsurface concentrations.

p. 8-7, §8.7 The text makes a statement that off-site sources are probably a major contributor to the high chromium concentrations observed in marine sediments. The text should provide the rationale for this statement.



Table 3-5	The ground surface elevations presented for monitoring wells in Table 3-5 differ from those presented in Table 2-6. Please provide an explanation for these variations.
Table 4-4	Dieldrin was detected in two storm sewer water samples including ST-1 detected at a concentration of 0.0058 $\mu\text{g/L}$ , and ST-2 detected at a concentration of 0.016 $\mu\text{g/L}$ . The number of storm sewer water samples greater than the marine AWQC chronic values for dieldrin (0.0019 $\mu\text{g/L}$ ) presented in the table should be changed from 1 to 2 samples.
Figure 3-5	The arrows that are assumed to depict groundwater flow direction should be identified in the legend.
Figures 3-10 through 3-9	It is unclear why there are two separate 4.5 groundwater contours. The 4.5 groundwater contour line adjacent to monitoring well MW-6S should be removed from the figure.

## REFERENCES

USEPA, 1992. "Dermal Exposure Assessment: Principles and Applications," Office of Health and Environmental Assessment, January 1992.

USEPA, 1995. "Region 1, Risk Update, Number 5," August 1999.

USEPA, 1998. "RAGS, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance," NCEA-W-0364, May 112, 1998.

USEPA, 2000. "RAGS, Part E, Supplemental Guidance, Dermal Risk Assessment, Interim Guidance," Office of Emergency and Remedial Response.